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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/042,653	01/08/2002	Steven R. Rogers	ZRI-031	7004

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EXAMINER	
PATEL, GAUTAM	
ART UNIT	**PAPER NUMBER**
2655	

DATE MAILED: 08/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/042,653	ROGERS ET AL.	
	Examiner	Art Unit	
	Gautam R. Patel	2655	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 December 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,7,10-13 and 15* is/are rejected.

7)☒ Claim(s) *6,8,9,14,16 and 17* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *3, 6*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-17 are pending for the examination.

Content of Specification

2. The disclosure is objected for following reasons.

a. This application does not contain an Abstract of the Disclosure as required by 37 C.F.R. § 1.72(b). An Abstract on a separate sheet is required.

Applicant is reminded of the *proper content* of an Abstract of the Disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains.

If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure.

If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement.

In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof.

If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following: (1) if a machine or apparatus, its organization and operation; (2) if an article, its method of making; (3) if a chemical compound, its identity and use; (4) if a mixture, its ingredients; (5) if a process, the steps. Extensive mechanical and design details of apparatus should not be given.

Applicant is reminded of the *proper language* and ***format*** of an Abstract of the Disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the **range of 50 to 150 words**. It is important that the **abstract not exceed 150 words in length** since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said", should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," *etc.*

In the present Application, in the abstract the invention itself is not described. Abstract is vague and too short.

b. The title of the invention is neither precise nor descriptive. A new title is required which should include, using twenty words or fewer, claimed features that differentiate the invention from the Prior Art. It is recommended that the title should reflect the gist of or the improvement of the present invention.

Corrections are required.

Claim Rejections - 35 U.S.C. § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 5, 7, 10, 13 and 15 are rejected under 35 U.S.C. § 102(b) as being anticipated by Fujii et al., US. patent 5,818,811 (hereafter Fujii).

As to claim 1, Fujii discloses the invention as claimed [see Figs. 4-13, especially

10-12] including providing a plurality of writing laser beams, modulating the writing laser, comprising steps of:

providing a plurality of writing laser beams [fig. 11, beams 106 and 107];

modulating the writing laser beams according to the data to be written to the corresponding tracks of the optical disk; and

providing an optical system for directing the laser beams to the corresponding tracks of the optical disk, wherein the plurality of laser beams illuminate spots on the optical disk that are spaced apart by a distance sufficient to prevent thermal interference between data marks being written by nearby beams of the plurality of writing laser beams [col. 8, line 31 to col. 9, line 3].

4. The aforementioned claim 5, recites the following steps, inter alia, disclosed in Fujii:

the plurality of spots are aligned linearly at an angle to the tangent of the data tracks of the optical disk [col. 8, line 31 to col. 9, line 3 and fig. 11-12].

5. The aforementioned claim 7, recites the following steps, inter alia, disclosed in Fujii:

the distance between writing spots is greater than or equal to about 3.8 um [col. 8, lines 49-64].

6. As to claim 10, it is an apparatus claim corresponding to method claim 1 and is rejected for similar reasons set forth in the rejection of claim 1, supra.

7. As to claims 13 and 15, they are drawn to an apparatus corresponding to the method of claims 5 and 7 respectively, are rejected for similar reasons set forth in the rejection of claim 5 and 7, supra.

Claim Rejections - 35 U.S.C. § 103

8. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 3-4 and 11-12 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Fujii as applied to claim 1 above in view of Maeda et al., US. patent 5,625,388 (hereafter Maeda).

As to claim 3, Fujii discloses all of the above elements, including plurality of laser beams and placing spots [marks] away from each other reduce [prevent] thermal interference. Fujii does not specifically discloses well known fact that distance between spots [marks] are function of the thermal characteristics of the disc to the extent claimed

However, it is very well known in the art that all marks are formed based on the thermal characteristic of the recording material, such as curing temperature of the substrate. Also Maeda clearly discloses:

the distance between spots is determined by the thermal characteristics of the optical disk [col. 16, line 65 to col. 17, line 63].

Both Fujii and Maeda are interested in improving the recording and reproducing mechanism of the disc. Both shows multiple spots recording and both shows effects of temperature on the spot sizes.

One of ordinary skill in the art at the time of invention would have realized that the system of Fujii would have been sensitive to waveform distortion, and removal of distortion is desired feature to have in the system.

Therefore, it would have been obvious to have used the thermal characteristic as a control parameter in the system of Fujii as taught by Maeda because one would be

motivated to reduce waveform distortions in the system of Fujii and provide better signal controls and improve quality of the signals [col. 16, lines 45-52; Maeda].

10. The aforementioned claim 4, recites the following steps, inter alia, disclosed in Maeda:

the distance between spots is determined by a temperature profile within the disk during a write operation [col. 16, line 65 to col. 17, line 63].

11. As to claims 11 and 12, they are drawn to an apparatus corresponding to the method of claims 3-4 respectively, are rejected for similar reasons set forth in the rejection of claim 5 and 7, supra.

12. Claim 2 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Fujii as applied to claim 1 above and further in view of Alon et al., EPO. Application 630002 A1 (hereafter Alon).

As to claim 2, Fujii discloses all of the above elements including plural light sources and multiple track writing done simultaneously. Fujii does not specifically disclose well known details of the optical head and associated details, such as spots are placed close to reduce aberration.

However Alon clearly discloses:

the distance between spots on the optical disk is minimized to reduce aberrations in the plurality of laser beams [col. 7, lines 6-27].

Both Fujii, and Alon are interested in providing smooth signals from the disc, both shows writing data simultaneously on a plurality of tacks on an optical disc, both shows multiple light sources.

Therefore, it would have been obvious to provide the system of Fujii with detals of optical head which reduces aberration as taught by Alon. The application or use of the aberration reducing head means as taught by Alon would have been obvious, because the optical head means performs the same function in the same way as the

optical head means of Fujii's system, and is an equivalent element. One of ordinary skill in the art would have recognized that the optical means of Alon was equivalent and an obvious alternative to optical head means of system of Fujii.

Allowable Subject Matter

13. Claims 6, 8-9, 14 and 16-17 are objected as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

NOTE: Claims 6, 8-9, 14 and 16-17 are allowable over the prior art of record since the cited references taken individually or in combination fails to particularly disclose a method for simultaneously writing data to a plurality of tracks which includes spots aligned at an angle to the tangent of data tracks which includes "that the angle between the line spots and the tangent angle is determined by relationship of sin alpha = k x p/d, and where k is the difference in track number between the track being written". It is noted that the closest prior art, Fujii shows a similar apparatus which reads and writes with multiple beams on multiple tracks and has tangent angles. However Fujii fails to disclose definition of k as being the difference in track number between the track being written.

Other prior art cited

14. 3The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Imanaka. (US. Patent 5208792) "Recording ....".

b. Reno (US. patent 4520472) "Beam expansion ....".

c. HAshimoto (US. patent 5691862) "Recording ...".

d. Koyama (US. Patent 5,594,711) "Optical recording ..".

Contact Information

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gautam R. Patel whose telephone number is (703) 308-7940. The examiner can normally be reached on Monday through Thursday from 7:30 to 6.

The appropriate fax number for the organization (Group 2650) where this application or proceeding is assigned is (703) 872-9314.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ms. Doris To can be reached on (703) 305-4827.

Any inquiry of a general nature or relating to the status of this application should be directed to the group receptionist whose telephone number is (703) 305-4700 or the group Customer Service section whose telephone number is (703) 306-0377.

GAUTAM R. PATEL
PRIMARY EXAMINER

Gautam R. Patel
Primary Examiner
Group Art Unit 2655

G.R. PATEL
PRIMARY EXAMINER

August 9, 2004